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THE NATURE AND

MODERN TREATMENT

OF

DEAFNESS

AND

DISEASES OF THE EAR,

ILLUSTRATED BY NUMEROUS CASES.

BY

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PREFACE TO THE SECOND EDITION.

THE favourable reception which the First Edition of this little work has met with from the public, is the best proof that the important nature of its contents required only to be known in order to be appreciated. For the commendation and kind recommendations of his medical brethren, the Author cannot sufficiently express how greatly he considers them entitled to his respect and gratitude. Their approbation of his humble endeavours to lessen the sum of human misery, is peculiarly gratifying to his feelings.

BRIGHTON,
March 19th, 1844.

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DEAFNESS, &c.

The History of Medical Science scarcely affords a more satisfactory example of high improvement than the modern treatment of diseases of the ear.

Next to the loss of sight, no deprivation can equal that of hearing, and as it is a matter of common observation, that blind persons are much more cheerful than those who are entirely deaf, perhaps the loss of hearing may be considered the greater misfortune.

The comparative neglect of the subject of aural surgery,—a neglect which, however, is now rather theoretical than practical, for the treatment of diseases of the ear has been greatly improved of late.

This improvement has taken place more generally on the Continent than in this country, where the practice of aural surgery seems to have retrograded, whilst all the other various

departments of medical science rapidly advanced.

One important proof of improvement is the general recognition among us that the principle of catheterism of the Eustachian tube must be a primary and transcendent element in the successful treatment of diseases of the middle and internal ear. And, indeed, it is scarce possible without it to make one single step in the right direction and not to be embarrassed with difficulties which a knowledge of this principle would very easily resolve. Let any one slightly run over the cases mentioned in this little work, and he will soon be sensible of the utility and advantage of the practice I am now recommending.

Deafness is a disease by no means of unfrequent occurrence, and which is too often abandoned to the unsuccessful efforts of nature.

This arises, apparently, from the timidity of the patient on account of the delicacy of the affected organ, and from a want of confidence in the treatment hitherto employed for its cure, all former methods of treatment having proved inefficacious, though without the least deficiency, generally speaking, in the assiduities or skilfulness of the surgeon.

Professional men, therefore, who so often find occasion to complain of services ill requited by

the public, have been unwilling to take upon themselves the responsibility of such cases for the sake of the trifling emolument or reputation they could expect to gain from the doubtful treatment of them.

The case, however, now is very different. The cloud that hung over this department of the medical art is at length dispersed, and we now see it, instead of unmeaning theory, taking its proper place as "one of the greatest improvements in modern surgery;"* and thus no longer, as hitherto, a reproach to the profession. Our Continental neighbours have led the way by supplying many valuable materials and setting an example of highly philosophical inquiry in this interesting field.

During the last few years there has been generated, even in this country, a sound taste among medical men, and which is now rescuing a very important department of surgery from the neglect and obscurity it had so long experienced.

We see many of our brethren distinguish themselves in different departments of the healing art, according to their particular taste and inclination.

* British and Foreign Medical Review, July, 1840—p. 95.

We are allowed a noble emulation in this point, and we should all of us strive to equal, and, if possible, even to excel, those who have gone before us.

It is not only the honour of the profession which is herein concerned, but the amelioration of our fellow-beings afflicted with deafness ought sensibly to affect us.

Some neighbouring countries seem inclined to deprive us of the glory of aural surgery in particular, by their extraordinary application to its scientific study, and by the learned works with which they enrich the profession.

We cannot deny the French and Germans their excellency in this respect, their enlightened views having been to us the rule and model of sound and correct practice.

But we traverse the regions of science, we walk in the paths of knowledge! Such a heavy affliction as that of deafness loudly called for every means that could be devised by the faculty for its cure and amelioration. I need not dwell on the importance of the sense of hearing.

The most important discoveries, however when familiarised to the human mind, are contemplated with indifference. Who now wonders at the discovery of America, or the circulation of the blood?

Since the introduction into medical practice

of the modern methods of treating diseases of the ear, a great desideratum has been obtained in this hitherto neglected department of surgery. For all medical men must have experienced more or less embarrassment and disappointment, such as happened to myself, in their efforts to afford relief in cases of deafness, from the want of a rational and scientific plan of treatment.

But the case will not be so in future. Thanks to Kramer (and his able translator, Dr. J. Risdon Bennet), Itard, Deleau, Pilcher, and others, we can now fully appreciate the value of modern improvements in the treatment of the various diseases incidental to the ear.

To succeed in the treatment of any disease, the first step is to lay down the end we should propose, to inquire by what means it is to be attained, and to choose out an able and experienced guide, who is able to conduct us safely to it.

In general practice this rule is seldom departed from. Though it is generally a very wise and judicious maxim to avoid all singularity and follow the received customs, yet it may be questioned whether in the point now treated of, this principle does not admit of some exception. If we consult our reason ever so little, it is easy to discern that the end which

we should have in view is not merely the application of a blister behind the ear; or, to quote a passage from the *Lancet*,—"To squirt a syringeful or two of tepid water (or soapsuds), or to instil a few drops of almond oil, or some more irritating and less harmless drug, into the auditory passage, &c., as remedies in all the varied maladies of the acoustic apparatus."

Patients would have cause to complain if they were condemned to spend years, if not the best part of their life, deprived of the sense of hearing, and in trying useless if not dangerous remedies, for the removal of a disease, which, by proper treatment, might have been very easily and speedily cured.

It is, however, only very recently that this department of medical research has assumed a form sufficiently inviting to attract general attention.

Formerly, from the neglect it experienced from the profession, and the superficial methods by which it was taught in the schools, it made but little or no progress.

But since men of scientific attainments have made it their business to become better acquainted with the subject, it has come forth with such striking claims to attention, that whoever possesses sufficient inclination and the means

of opportunity, naturally begins to turn his attention to it.

The anatomy of the ear has always been the study of medical men (though this cannot be said with regard to its diseases), and nothing certainly is more worthy of a share of our attention.

It is impossible to see our fellow-creatures afflicted with deafness continually under our eyes, and with our full knowledge, without making some effort for their relief. When we consider the complex structure of the ear, we cannot be surprised that the causes of the imperfection, or complete loss of the sense of hearing, should be numerous.

Diseases of the ear are much more frequent than is generally imagined. In their progress they show a tendency to run a chronic course, and many persons are hereditarily predisposed to them. Advanced age predisposes to dullness of hearing.

But the open form of the ear, which exposes it to the injurious effects of the weather, &c., may be said to be the principal predisposing cause. The chief exciting cause is cold.

Erysipelas, and other cutaneous diseases, scrofula, &c., are also conducive to the production of diseases of the ear.

In general, says Kramer, the prognosis in

diseases of the ear is by no means bad. It is true that there is as little reason for expecting that the development of the system at puberty will produce any beneficial action favourable to diseases of the ear previously existing, and that have been left to themselves; yet it is of the utmost importance to know, that diseases of the ear admit of a very certain diagnosis (not, indeed, according to the usual old established mode), that in general they run a chronic course, and that under the influence of these two circumstances, they are almost all curable, if the treatment of them be only undertaken in proper time, and with the proper remedies.

But this right movement of time is, to the great prejudice of the patients (partly from their own faults, and partly from that of ill-informed advisers), almost always neglected, and thus the disease is, artificially and quite contrary to its nature, rendered incurable.

Both patients and medical men far too readily hope that an apparently unimportant affection, not attended by much pain, will disappear without any assistance from art. Many imagine that a discharge from the ear, which may exist, may be salutary as a channel of discharge for all sorts of acrimonies concealed within the interior of the body, and that, therefore, it ought not to be cured.

Others again do not notice the diminution of their hearing until the disease has attained to a very high degree. Others are soon enough aware that they are suffering from disease of the ear, but knowing the bad success attendant on many of the curative methods pursued in the usual superficial way, shrink from any medical treatment. It is only to be wished that such patients may be fortunate enough to escape the evil tendency of their disease to become more and more confirmed from year to year. The degree of deafness, the age of the patient, or even the length of time that the disease has existed, of themselves afford no certain criterion as to the nature of the disease.

Ocular inspection, investigation by means of the air-douche, &c., must always decide in particular cases.

Every other circumstance, even hereditary predisposition, is of far less importance than those just mentioned.

THE VARIETIES OF DEAFNESS are usually arranged under separate heads, according to the part of the organ affected; as, for instance, the auricle, and external auditory passage, the middle ear, and the internal ear itself.

Deafness from obstruction of the external tube of the ear is generally owing to a collection, and hardened state of the secretion,

or ear-wax; sometimes from excrescences within the passage, and not unfrequently from inflammation and thickening of the soft parts of the canal, which is often ulcerated.

Deafness is sometimes produced by the presence of extraneous bodies in the external ear.

When the above conditions of the external ear exist, besides the general defect of hearing, the patient generally complains of noises of various kinds, which are extremely distressing to him, and which he is more anxious to get rid of than even the deafness itself. When the defect of hearing proceeds from the accumulation and induration of the cerumen or wax of the ear, it may be removed by carefully syringing the ear with warm water.

POLYPUS GROWTHS OF VARIOUS SIZES often spring up in the external auditory passage. These are most effectually removed by means of the forceps, and the proper remedies employed to cure and prevent inflammation, and the return of the complaint.

ULCERATIONS OF THE CANAL, and the discharge connected with it, are generally cured by mild astringent injections, acetate of lead, counter irritation behind the ear, and constitutional treatment, according to the nature of the case.

TUMEFACTION OF THE AUDITORY PASSAGE, producing deafness, is not unfrequently met with. The most common exciting cause of the disease is the application of cold, from washing the ears with cold water, imprudent bathing, draughts of air striking on the ear when heated, &c.

IN THE TREATMENT of this complaint I have found sponge compresses, and the use of *iodine*, both internally, and applied externally in the form of liniment, in the neighbourhood of the ear, the most beneficial remedies.

By these means the absorbent vessels are roused into a state of increased activity, and the effects of the chronic inflammation are generally removed, and the improvement or restoration of the hearing is effected.

DEAFNESS FROM OBSTRUCTION OF THE EUSTACHIAN TUBE is a very common occurrence. Among its chief causes may be mentioned inflammation and its consequences.

A common cold, for instance, by giving rise to thickening of the lining membrane of the tube, or to a collection of mucous within its cavity, may occasion deafness, by closing up the passage, and excluding the admission of air from the middle ear.

This disease may also occur from syphilitic ulceration of the throat, fevers, quinsy, and a

variety of other causes. When the Eustachian tube is stopped, the patient, when he expires forcibly with the mouth and nose closed, does not experience any inflation of the tympanum, nor that crackling sensation in the ear that is felt by persons in health, when they make a similar experiment.

In cases of Nervous Deafness, or disease of the internal ear, it is not only difficult, but almost impossible to form more than a probable conjecture as to the morbid state of the parts in this deep seated organ, without the most careful and accurate investigation of the Eustachian tube.

This subject will be more fully spoken of hereafter, and the favourable results of its treatment illustrated by cases.

Partial or complete destruction of the drum of the ear, loss of the small bones, and purulent discharge, are generally associated with deafness of more or less severity, according to the amount of injury sustained by the ear.

Relief, however, even in these apparently hopeless cases, is not always beyond the reach of art, and this is sometimes effected by very simple means. The following case is an illustration of this remark:—

Mrs. B——, Old Market-street, Bristol, had disorganization of the drum of her left ear. This was accompanied by a discharge and

extreme difficulty of hearing. The malady followed an attack of scarlet fever, and had existed for forty years.

Injections of warm water into the ear, escaped in a full stream through the corresponding nostril. She was almost quite deaf, having entirely lost the use of the right ear.

A tent of moistened cotton wool, as recommended by Mr. Yearsley, was passed carefully to the bottom of the auditory passage, so as to form an artificial drum-head.

To her great astonishment she then heard distinctly, and answered any questions that were addressed to her in the usual tone of speaking. Previous to this she could scarcely hear a sound.

INFLAMMATIONS OF THE EAR.—These are of two kinds, acute and chronic, and may attack every tissue or part of the organ.

The first usually runs its course with great rapidity, and has received the name of *earache;* while the latter is slow in its progress, free from pain, and is mostly distinguished by a discharge of matter from the ear, has been called *chronic.*

When inflammation attacks the auricle, ERYSIPELAS is the name by which it is commonly known.

The auricle, or external ear, seems to be

more commonly affected by erysipelas (of which there are several varieties), than any other part.

When it extends to the auditory passage, which it usually does, the soft parts become so swollen as sometimes to nearly close up the canal; and when it only invades the skin, it is not uncommon to see it run from one ear across the forehead to the other.

Certain constitutions are more prone to erysipelas than others. It commences with a florid skin, with a peculiarly acrid, burning heat of the inflamed parts; the auricle becomes hard, swollen, and painful to the touch, and frequently there are vesicles containing a thin fluid of an amber colour under the raised skin. These, after suppurating, dry up, and form scaly eruptions over the ear; and from the inflamed secreting vessels there exudes an irritating discharge, accompanied by more or less difficulty of hearing.

Erysipelas of the ear is produced by any cause which may give rise to other inflammations. It often succeeds the most trifling injury of the skin.

The treatment will vary, therefore, according to the character of the complaint. The topical applications resorted to by surgeons are various.

Case II.—Mrs. S——, aged 56, has suffered for ten years from erysipelas of both ears,

attended with deafness, singing in the ears, thickening and swelling of the auricles, and a discharge of matter from the auditory canals.

The ears were red, swollen, and covered with small scales, with here and there suppurating, corroding pimples, which dried, and fell off in the form of fine bran.

These eruptions were accompanied with an intolerable itching, and spread over the contiguous parts; and the ear was swollen to such an extent that its natural form and appearance could no longer be recognised.

The aural passages were not exempt from the disease; they were so tumified and contracted as scarcely to admit of the introduction of a crow quill.

Aperient medicines, sponge compresses, mild astringent injections, alteratives, and zinc ointment, removed the discharge, swelling, redness, heat and itching of the parts, effectually, in six weeks.

The singing in the ears disappeared, and a great improvement in the hearing was effected. The ticking of a watch, which the patient had not heard for ten years previously, was now audible, at a considerable distance from the ears.

INFLAMMATION OF THE EAR is generally unattended by fever, though the sufferings of the

patient are very great. Occasionally, however, it is accompanied with fever, assumes a formidable appearance, coma, delirium, and even a fatal termination has been the consequence.

This complaint is produced by the same causes with other inflammations, but by none more frequently than exposure to cold. Its treatment must be conducted on the same principles as in inflammation of other parts of the body. When inflammation of the ear is accompanied with universal pain diffused all over the head, fever, delirium, or coma, it requires active treatment, as in inflammation of the brain.

If the pain does not abate, but on the contrary should continue to increase, suppuration will probably take place. This may be encouraged by warm fomentations and poultices, and when the abscess bursts, or is opened, the ear should be gently syringed now and then with warm water.

Suppuration is generally the consequence of these violent forms of the disease, and then the structure of the middle ear is often involved and more or less injured or destroyed; the small bones being sometimes discharged through the external auditory canal, with a quantity of purulent offensive matter.

EAR-ACHE sometimes continues for several days without any apparent inflammation, and is

characterised by all the symptoms of neuralgia in other parts of the body, violent pain, increased sensibility, and noises of various kinds and degrees of intensity in the ear.

A solution of opium in warm water, or warm oil, dropped into the ear, and twenty-five to thirty drops of opium (for an adult), taken internally, will often afford relief.

The following case will serve to illustrate the treatment of this disease:—

Case III.—Mary Ann Drapes, No. 1, Sussex-place, thirteen years of age, shortly after taking cold, suffered violent pain in her left ear, which extended over the side of the head and face, and was accompanied by loud singing in the ear, a thin discharge, and great difficulty of hearing

Three days afterwards I was requested to see her. On examination, the auditory passage was found red, swollen, and contracted, at the lower end, and nearly the entire surface of the drum-head presented a similar appearance.

The patient could not hear the ticking of a watch, and she had had no sleep for three successive nights.

Ordered leeches, and the application of a blister behind the ear, warm fomentations, and warm oil to be dropped into the ear. Purgatives, Dover's powder, the most perfect quiet,

and the simplest diet of water with farinaceous substances, &c., were also prescribed.

These remedies, after two days, removed the pain, and so improved the hearing, that she heard the watch at a distance of three feet.

Simple injections were now used, and at the end of eight days, the redness and swelling, noise in the ear, deafness, and discharge, entirely disappeared.

Inflammation of the auditory passage may be communicated to the membrane of the drum, which may become inflamed, thickened, ulcerated, and incapable of transmitting sounds.

The mucous membrane which lines the cavity of the drum may also partake of the disease of the external ear, or it may itself be the primary seat of disease.

It may become inflamed and thickened, in consequence of which the size of the chamber is diminished.

A collection of mucous in the middle cavity of the ear may occur without any pain in the ear, or discharge of matter; and in the absence of any appreciable disease or lesion of the aural passage. There may also exist an accumulation of coagulated blood, or of pus, in the cavity of the drum, and this may happen when deafness succeeds violent pain in the ear, accompanied by other symptoms of inflammation; and when

these and ulceration of the external auditory passage are either absent or exist only in a slight degree.

It would far exceed the limits of this small work, were I to enter into any minute details of particular inflammations of the ear. I have but simply given a general outline of their nature and principles of treatment.

The organ of hearing is composed of almost every variety of structure to be found in the anatomy of other parts of the human body,—all subject to similar forms of disease, and all amenable to the same general rules of treatment.

Having very briefly alluded to these, in the foregoing pages, I come now to the principal part of my subject. And as I am desirous of directing attention to the more important diseases of the middle and interior ear, I shall begin with those of the Eustachian tube. Nervous deafness, &c., shall be noticed further on.

Previous to the introduction of the modern practice, presently to be described, no means of cure for deafness resulting from obstruction of the Eustachian tube had been recommended, except puncturing the drum of the ear.

This method was adopted by Riolanus and Cheselden, and more recently by Sir Astley Cooper, whose loss England will long have

occasion to lament. But the patient is liable to a return of the deafness, owing to the aperture thus made in the membrane again closing, which detracts very much from the value of the operation. To remedy this inconvenience, Buchanon recommends a perforator with four cutting edges; and Kramer praises a little punch invented by Himly, by which a portion of the drum-head is removed clean out.

In the present state of knowledge this would not be a desirable proceeding, and ought not to be adopted by surgeons, unless forced by expediency, or, in other words, until catheterism of the Eustachian tube has failed. We may then come to the operation, but not make it too common and habitual, for then the remedy would be worse than the disease.

The operation is admissible only in those very rare cases in which obliteration of the Eustachian tube, or a horny, cartilaginous state of the membrane of the drum exist. It is the last extremity a patient should be exposed to; for it is a rule that we should never propose harsh measures for the relief of any disease of the ear. This method has been superseded by injecting the Eustachian tube, after the manner of Guyot, a postmaster, of Versailles, who reaped the first laurels in this field; and whose discovery, having opened the way to the seat of

hearing, has achieved more for the successful treatment of diseases of the ear than all the efforts which had preceded it for a thousand years.

Guyot conceived the happy idea of introducing an instrument into his Eustachian tube (the anatomical discovery of which by the celebrated Eustachius had, for nearly two hundred years, been made no use of), with a view to relieve his own deafness.

This new and quite unexpected exploit of Guyot attracted at the time general notice in France, and obtained the approbation of the Royal Academy of sciences of Paris, to the members of which learned body he exhibited the progress of his splendid discovery. Thus the method adopted by Guyot, though necessarily imperfect, led to results which were before unattainable.

But who does not see that the ingenuity and talents which, under great disadvantages, accomplished so much, would have been capable of far greater service with suitable appliances and means at their command?

The modest labours of genius, whatever their value, would often be lost to the world, were it not that men like Kramer draw them from obscurity, and place them in a fit sphere of action.

One of the conditions essential to the sense of hearing is a free passage of air through the Eustachian tube. But the size of this tube may be diminished or obliterated by an accumulation of mucous, by thickening of its lining membrane, or by the adhesion of this membrane at one or more points, and thus producing stricture of the canal.

Among other causes of obstruction of the Eustachian tube may be mentioned various diseases of the throat, as inflammation of the soft palate and tonsils, scarlet fever, measles, small-pox, &c., and the extension of the inflammation into the tube and cavity of the tympanum, hence the violent pain in the ear, and the difficulty of hearing which sometimes accompany sore throat.

INFLAMMATION OF THE MUCOUS MEMBRANE OF THE MIDDLE EAR, WITH ACCUMULATION OF MUCOUS.

Alard designates this disease (which seldom extends beyond the mucous lining), "chronic internal catarrh." Itard speaks of it under the title of "deafness from engorgement of the internal ear; engorgement and obstruction of the cavity of the tympanum; inflammation of the Eustachian tube, &c.;" and other authors describe it by a variety of other names.

Its diagnosis, which is by no means difficult,

should always engage our attention; for, when properly understood, there is, perhaps, no form of disease of the ear giving rise to deafness, in which the result of appropriate treatment is more striking and satisfactory.

Great dulness of hearing, either unattended by pain, or merely by a feeling of fulness and weight in the ear, and even in the head, are the chief symptoms of which the patients complain who labour under this form of disease.

Not unfrequently, however, there is a crackling noise in the ear, and a troublesome irritation in the auditory passage, together with a constant stuffing of the head; but in many instances these are altogether absent,—the deafness being the only constant symptom. Frequent attacks of catarrhal affections, and especially the application of cold to the head and feet, are the chief exciting causes of this form of deafness.

Generally speaking, both ears are affected, but sometimes only one; and there is either a violent, distressing noise in the ears, or this may exist only in a very slight degree, or perhaps not at all.

The disease is very common in this country, particularly in wet weather, and low damp situations.

The hearing is usually better in warm weather, and after exercise in the open air, but

is always worse when the patient has taken cold. The internal surface of the Eustachian tube is lined with a continuation of the mucous membrane which lines the nose and mouth, throat, bronchil tubes, &c.

The tube itself, according to the most accurate measurements, is only about the one thirty-second part of an inch in diameter, at its narrowest part.

It is not surprising, then, how liable it must be to obstruction from various causes.

For the investigation and treatment of the Eustachian tube, flexible silver catheters were employed by Cleland, and other early English surgeons.

Those now used by the Montpellier surgeons, and recommended by Saissy, Itard, and Kramer, are inflexible. They are about six inches long, and of a calibre varying from the size of a large crow-quill, to that of a small goose-quill.

Their extremity is smooth and well rounded, and they are curved to the extent of five lines from their further extremity, so as to correspond with the lateral situation of the Eustachian tube.

Occasionally the catheter is graduated according to inches; but this is quite unnecessary to a practical aurist. The injecting apparatus shall be described hereafter.

My esteemed friend, Mr. Pilcher, to whom I stand indebted for a great portion of the little I know on this subject, has made considerable modifications and improvements in these instruments; and particularly as regards the catheter, to which he has given an additional and convenient curve.

Before introducing the catheter it should be oiled, and then passed carefully forwards, gliding over the floor of the nostril with the concavity turned downwards. It should then be rotated, just before it touches the pharynx, turning it outwards and upwards into the mouth of the Eustachian tube, which is nearly on a line with the tip of the nose.

Into the catheter thus introduced air is to be injected, the operator listening attentively, with or without a stethoscope, to the noise which the air makes in passing into the ear of the patient.

If no obstruction exist, the air passes up without any interruption to the middle ear, causing a blowing and rustling noise as it enters. But should there be an accumulation of mucous in the Eustachian tube or cavity of the drum, there is heard a peculiar gurgling or whistling noise which indicates obstruction from this cause.

Immediately after the air has entered the ear the patient feels greatly relieved from the singing and deafness of which he had before

complained, and, in many instances, the power of hearing is completely restored.

This far-famed operation, though not generally practised, is a triumph of surgical progress, which exhibits what has been accomplished for the cure of deafness, far more satisfactorily than the bare allusion to it in this place.

As a means of exploring the Eustachian tube, and ascertaining the nature of diseases of the ear, the air-douche and catheter are indispensable. The latter is also requisite in dilating stricture of the tube, for the purpose of introducing through it a bougie or stilet, and for the removal of extravasated and coagulated blood in the cavity of the tympanum, from a severe blow or fall on the head.

For condensing and injecting the required air, various methods have been adopted by different medical men. Dr. Kramer has invented a powerful air-press (see Engraving, fig. 1), for this purpose. The inconveniences attendant on the application of this complicated machine, which I at first made use of, induced me to substitute for it a small caoutchouc bottle of atmospheric air.

This is furnished with a silver tube, to correspond with the catheter, and answers efficiently, every purpose to be fulfilled by the air-douche.

This little apparatus, which I have used during the last ten years, is of the simplest construction, easy of access and application, and not liable to get out of order. It causes neither trouble nor loss of time, requires no preparatory charging—an important desideratum—and what is more, it does not alarm the patient.

These last considerations are so much the more important, as simplicity is one of the most essential conditions in the treatment of diseases of the ear.

Being self-charged with air, the caoutchouc bottle is held with the right hand, and the tip of the tube placed in connection with the catheter. At the same time, the fingers, on being simply pressed against the sides of the apparatus, can regulate the force which the pressure shall exercise while discharging the contents of the instrument.

Another advantage I possess by this simple contrivance is, the facility of introducing medicated air; that is, atmospheric air, impregnated with particles of various medical substances, which volatilize at a low degree of heat, and adapted to diseases of the middle and internal ear.

Thus, for example, when acetic ether, or any other substance which volatilizes at the ordinary temperature of the room, is intended to be

introduced, it is sufficient to drop a few drops of that substance on a bit of sponge, to be placed in the apparatus, and the air contained in it becomes charged with the vapour of the ether.

When requisite to employ a narcotic extract, as, for instance, belladonna, with a view of relieving tinnitus, or noise in the ear, I place a small quantity of the belladonna, finely pulverized, in a piece of thin muslin, to be suspended in the apparatus, and the air becomes also impregnated with the volatile particles of the belladonna.

By this simple mode morphine, hyoscyamus, and other sedatives may be employed with facility and advantage.

As adjutory means in the treatment of the irritable form of nervous deafness, these remedies, employed as above, are often very efficacious in allaying the noises in the ears, which invariably accompany that disease.

Particles of veratrine, strychnine, &c., as stimulants, in the torpid form of nervous deafness, may also be introduced in a similar manner, in this variety of deafness.

As a vehicle, then, for medical substances, in the treatment of diseases of the interior and middle ear, the importance of the air-douche must be obvious.

It has fallen to my lot so frequently to employ

this remedy, and with such complete success, as will be seen by the numerous cases to be detailed, as perhaps has given that confidence and method of which practice alone is capable.

CASES.

Case IV.—J. N. O. Rutter, Esq., F.R.A.S., well known for his scientific attainments, in this town, writes:—

"October 19th, 1842.

"Sir,—I am very thankful to you for the relief you afforded me on Saturday last, by the neat and very ably performed operation on my left ear. I have now the perfect use of that ear, and of the right, partially," &c.

This gentleman was recommended to me by Mr. Philpott, the eminent surgeon, of Devonshire-place. His deafness was produced by obstruction of the Eustachian tube, from mucous engorgement.

The external ear was sound. On the first application of the air-douche, to the astonishment of the patient, and a lady who accompanied him, a perfect cure was immediately effected.

A fortnight subsequently, Mr. Rutter applied again respecting the deafness of his right ear.

The same simple process was repeated in this instance, and with the most complete success. In a few minutes, the power of hearing was perfectly restored, and has continued so ever since.

CASE V.—Mr. Fisher, a respectable dentist, of this town, has kindly favoured me with the annexed communication, which I insert in this place:—

"Dorking, November 10, 1842.

"DEAR SIR,—

"I received your note this morning, inquiring after my hearing since I left Brighton. I am happy to be able to say that I continue quite as well, if not better, than when I left Mr. Downing.

"I was very deaf when I paid Mr. Downing the first visit, and had suffered much for several years, which caused great nervousness and dejection of spirits. But after the fifth visit, I began to find such a delightful change in my feelings that words fall short to describe.

"My friends, on my return home, were quite surprised at the very great change in me for the better. I shall, therefore, recommend all, rich and poor, who are suffering from deafness, to apply to Mr. Downing for relief," &c., &c.

My friend, and former fellow student, Mr. Rugg, surgeon, of Middle-street, and the Count

Werdinskey, a gentleman of extensive medical acquirements, who were present on one or two occasions when I applied the air-douche in Mr. Westland's case, expressed their astonishment at the painless nature of the treatment, and the extraordinary benefit derived from it by the patient.

After a fortnight's attendance Mr. Westland returned home, much delighted on being freed, in so short a time, from a very distressing deafness and singing in the ears, giddiness, and violent pains in the head, confusion of intellect, &c

These symptoms were much increased by the least bodily fatigue or mental excitement.

In this case both Eustachian tubes and the middle cavity of each ear were obstructed. The air-douche, till after the fifth application, did not pass up to the cavity of the tympanum, when it immediately produced the beneficial effects described by the patient.

After repeated introductions, as the air obtained free access to the middle ear, it was accompanied, each time, by an increased alleviation of the deafness, as well as of all the other complaints above mentioned.

Bleeding, blistering, cupping, purgatives, change of air, &c., were employed for several years, but without affording the slightest relief.

On the contrary, they only aggravated the evils they were intended to avert.

This case was seen by Mr. Philpott, Mr. Whitehouse, Mr. Rugg, and other surgeons, of Brighton.

CASE VI.—Mr. Dale, coal merchant, 20, Church-street, 58 years of age, after taking cold about three years since, became totally deaf in the right ear; the tinnitus, or noise which accompanied his deafness, was so violent as even to disturb his sleep. It recurred on awaking in the morning, and persisted during the remainder of the day without the least intermission.

I found the external auditory passage stopped up with hardened secreton, or wax, the removal of which, however, afforded no relief. The left ear was quite sound.

The air-douche was now introduced into the Eustachian tube, for the first time, but no air entered the middle ear. On the following day the air was applied again, and the patient heard a watch tick, when placed in contact with the ear.

Two days afterwards the air passed up to the cavity of the drum, and increased the hearing distance to six inches. On his next visit the air entered the middle ear in a full stream, and the watch was then heard at a distance of three feet.

As this case of mucous engorgement of the middle ear was associated with nervous deafness, and the noise still very troublesome, the vapour of acetic ether was now substituted for the simple air. The method of employing this will be described in another place.

This was persevered in daily for three weeks, at the end of which time the noise in the ear had entirely subsided, and the hearing was perfectly restored.

Case VII.—Lucy Knowles, 28, Frederic-place, 12 years of age, has suffered during the last five years from extreme deafness, attended with various kinds of singing and buzzing noises in the ears, and an unpleasant sense of weight and fulness in the head. Her mother can assign no cause for these complaints.

Externally, the ears presented a healthy appearance. Both Eustachian tubes were obstructed; and so great was the deafness, that she could only distinguish words when the person speaking to her shouted into her ear.

After the first application of the air-douche to the right ear, she was surprised to find that the hearing in that ear was suddenly restored.

My watch which, before the commencement of the treatment, was quite inaudible, even when pressed against the ear, was now heard at a distance of six feet.

Two days afterwards the left ear was treated in a similar manner, and in the course of a few minutes she was cured in this ear also.

The watch being now heard on either side at the distance of thirty feet,—the singing and other complaints of the ear and head having entirely ceased, she was dismissed effectually cured.

Case VIII.—Mr. Hall, aged 56, after a severe cold, lost the hearing of his right ear. Had consulted several medical men, who ordered medicine, leeches, blisters, fomentations, and drops of different kinds, but without any relief. The external ear was perfect.

Investigation by means of the air-douche soon revealed the existence of closure of the Eustachian tube and middle ear, from mucous accumulation.

On the first application of the air to the affected ear, a striking improvement was effected.

Only a few days' attendance were required, in order to remove the obstruction so effectually as to allow a free passage of air to the cavity of the tympanum, when the hearing was again immediately restored.

Case IX.—In consequence of the preceding case, Mr. Hunt, aged 30, applied to me. He had experienced a gradually increasing deafness of the right ear, for several years.

After an unsuccessful course of treatment

which he had undergone in London, my advice was requested.

Upon examination, I found the external ear perfect, the membrane of the drum white and transparent, and the secretion natural. But the Eustachian tube was so completely stopped that no air could be made to enter the middle ear.

I succeeded, however, in passing a fine whalebone stilet up to the drum-head. This simple but delicate process was repeated once a day for several days, the stilet being allowed to remain in the tube a few minutes each time in order to dilate the passage.

The air having now gained free access to the middle ear, the hearing distance increased from four inches to nearly thirty feet.

The patient was perfectly cured. This was a case of stricture of the Eustachian tube. Kramer, in treating this complaint, employs a catgut bougie (the E harpstring), which has the quality of swelling, and thereby dilating the stricture in an easy and uniform manner. Pilcher uses a small whalebone stilet for the same purpose.

Case X.—James Smith, 13 years of age, deaf from birth. January 20. This patient was sent to me from the Pavilion.

He is quite deaf, and never remembers having been free from "noises in the head and ears."

His mother can assign no cause for these complaints.

The external ears and throat presenting a healthy appearance, I introduced the air-douche into the Eustachian tubes alternately; and in the course of a few minutes, to the great joy of his parent, he could hear a whisper. The noises in the ears and head vanished; and instead of not being able to hear the bells of the old church pealing near his ear on the preceding New Year's day, as the lad informs me, the ticking of a watch was now distinctly perceived by him at the distance of many feet.

His parent, generously regretting her pecuniary inability to show her appreciation of the benefit thus conferred, expressed her gratitude and thanks for so "wonderful and apparently miraculous a cure."

Case XI.—Mr. Boyer, aged 52, an opulent farmer, from Downham Market, has suffered from deafness and an incessant loud noise in the right ear.

States that he had made use of every means that could be thought of by the medical gentlemen in his neighbourhood, but without the desired effect; that he had come a long distance on purpose to consult me, and hopes that I may be able to afford him some relief.

Considers his malady was induced by cold.

External ear sound. Hears my watch only at a distance of one inch.

I introduced the air-douche in the usual way, and to the great delight of the patient, the deafness and noise in the ear immediately disappeared.

The watch, which before the treatment could scarcely be heard at all, was now audible at the other end of the room. Mr. Boyer went home cured.

Case XII.—Mr. George Trevis, 19 years old, Assistant Librarian at the Royal Literary and Scientific Institution, in this town, applied to me respecting great dulness of hearing, and noise in the ears.

His deafness came on gradually, and has continued along with the noise to increase during the preceding five years. He cannot refer his affliction to any particular cause. The external lining membrane, and the drum-head of both ears are perfect. On applying the air-douche into the right Eustachian tube, it passed up to the middle cavity of the ear with a gurgling sound, and in an instant the deafness and noise in the ear had entirely vanished. The treatment was not repeated, a cure having been immediately effected.

Case XIII.—An eminent solicitor, who had suffered from deafness for fifteen years, and had

consulted Sir Astley Cooper, Mr. Abernethy, and other eminent surgeons, who prescribed blisters, galvanism, &c., to no purpose.

Mr. Maule, Mr. Curtis, Mr. Stephenson, and others, were also applied to; and he went the whole round of medical men, without experiencing any alleviation of his deafness.

Several years subsequently he consulted me, and, I am happy to say, the gentleman returned home cured,—his deafness, which arose from obstruction of the Eustachian tubes, having been blown away by a simple puff of atmospheric air! So that an effect, which no means could produce before, was now accomplished as if by magic.

Case XIV.—William Johnson, 17 years of age; in good health; was sent to me by Mr. Slater, Conservative Club, Old Steine, where the patient now resides.

States that he has been subject to deafness and noise in the ears from infancy. He cannot date his complaints to any cause. Has lately lived in the establishment of Lady John Townsend, at Hampton Court Palace, but was obliged to relinquish his situation in consequence of his deafness. On examination, I found both Eustachian tubes obstructed from mucous accumulation. The external ears were quite sound.

He cannot hear the ticking of a watch unless it is in contact with the ear.

I passed a gentle stream of air into the right Eustachian tube, immediately after which he heard the watch at a distance of thirteen feet. The same treatment was adopted on the other side, and as soon as the air had been used, the watch was again tried, and he heard it beat at the same distance as with the right ear.

The singing in the ears ceased, and the head became at once clear and comfortable.

The hearing was then tested in the presence of Mr. Stafford, surgeon, Mr. Slater, and other gentlemen, when he heard in the most distinct manner all the tones of a musical snuff-box for the first time in his life. This was quite apparent to all present, by the accuracy with which he described the notes, though he was situated in the hall outside the room, whilst the instrument was in motion.

Case XV.—Mr. Baker, No. 1, Spring Gardens, 30 years of age, has been afflicted with deafness and a violent noise in his right ear, for two years.

Says the noise in the ear resembles "the blowing of a pair of bellows in a distant room," and never ceases to annoy him. Attributes his complaints to exposure of the head and ear to draughts of air.

Upon examining the ear with the speculum, the external passage was found perfect, but there was a considerable perforation of the drum-head. The Eustachian tube on the same side was stopped.

On the second application of the air-douche, it passed out through the hole in the drum with a whizzing noise, and increased the hearing distance from four to thirteen inches. Five more applications of the air entirely freed the Eustachian tube from all obstruction; and, notwithstanding the perforation of the drum, the hearing was restored, and the blowing noise in the ear no longer in the least troubled him.

CASE XVI.—John Cook, aged 27, recommended by Mr. Wisden, builder, Hampton-place.

Labours under a remarkable degree of deafness, with a continual singing noise in the ears.

Attributes his disease to frequent attacks of cold. His tonsils are enlarged to an almost incredible size.

Both Eustachian tubes are obstructed, and he cannot hear a watch unless held close against the ear.

I introduced the air-douche on each side, and in the course of a few minutes, even before the withdrawal of the catheter, he was completely cured.

From this instance (and I have seen a great many similar to it), I think it is most obvious that deafness is seldom or never produced by the pressure of enlarged tonsils on the mouth of the Eustachian tubes, though the converse has been alleged by most authors. Kramer, however, refutes the allegation, and refers to the fact, that enlargement of the tonsils are frequently met with both with and without the slightest dulness of hearing,—a fact which must be familiar to all medical men.

Case XVII.—James Dix, aged 14, 23, Bread-street; has been deaf five years. A singing noise in the ears is constantly present. His sister ascribes the deafness to cold. External ears perfect. Tonsils enlarged slightly.

The air-douche was introduced into each Eustachian tube every alternate day for a fortnight; after that period it was no longer required. A cure of the deafness and noise in the ears had been effected.

Case XVIII.—A young man from Lewes, recommended by Mr. Rugg, surgeon; states that he has been deaf for several years, and that he is never free from a noise in the head and ears.

This case was similar to the preceding. Both Eustachian tubes were obstructed. On the first introduction of the air-douche, the improvement

was striking in both ears. I saw this patient only a few times. He was quite cured.

Case XIX.—Mr. Gates, High-street, Lewes, 19 years of age. He says, that when he was about ten years old he became deaf, and soon afterwards a discharge flowed from the ears. The membrane of the drum is sound on each side, but the auditory canal is ulcerated, and its lining membrane thickened. The Eustachian tubes are obstructed by mucous.

Having removed this, as in the other cases, by means of the air-douche, the hearing was considerably increased. The air was repeated several times, and always with the same successful result. Counter irritation behind the ears, astringents, &c., removed the discharge and chronic inflammation. The patient, after a short attendance, was cured.

Case XX.—Master Cox, aged 15, son of Mr. Cox, of Southampton, had been deaf six years; and before I saw him had undergone a very painful but fruitless treatment for a period of six months.

It appears that such was the severity of the treatment pursued, it was necessary to fasten the patient's head to a strong chair, and pass a strap over his arms and legs, in order to fix them, whilst the operator attempted to introduce a catheter into the Eustachian tube.

The patient bled at the nose, and fainted, after each operation. Brandy had been administered to revive him. Twelve months had elapsed after these attempts, when he was brought to me. I found the left ear inflamed and ulcerated, with a purulent discharge, and the Eustachian tubes obstructed.

In the presence of his parents, I introduced the air-douche on each side. The result was particularly gratifying—a complete cure of the deafness being instantaneously effected—and without the slightest pain or inconvenience of any kind.

The subsequent treatment of the left ear does not come under consideration in this place.

Case XXI.—Miss S. E. Allam, aged 11 years, has been afflicted with deafness and noise in both ears since the age of two years. Her mother cannot refer her complaints to any distinct cause, except that she has been much disposed to take cold. External ears well formed, and the secretions natural.

Injections of air into the Eustachian tubes immediately relieved the little patient. These were repeated two or three times subsequently, at distant intervals, when the hearing was perfectly restored, and the noise in the ears had entirely ceased.

Case XXII.—Mary Rogers, aged 20, a servant,

in St. George's-place. Lost the hearing of the right ear when a child. A sanious discharge preceded the loss of hearing, and still continues. Complains of a noise in the ear, and she cannot hear the clock of St. Peter's church, close to which she resides. She also labours under a considerable degree of bronchocele.

Besides the above complaints, I found the right Eustachian tube stopped. The auditory passage was syringed with warm water, and tartar emetic ointment was ordered to be rubbed in behind the ear till suppuration occurred. Mild astringents, &c., were also employed. After this, the chronic inflammation and discharge disappeared. The air-douche was now introduced into the Eustachian tube, with marked alleviation of the deafness and noise in the ear. For the bronchocele she made use of *iodide of potassium* twice a day in water.

July 4.—Says that she hears "a deal better," and the swelling of the neck is both smaller and softer. Hearing considerably improved each time by the air-douche. July 15th, the neck and bronchocele measure two inches less than when she first applied. On the 12th of September following, when the treatment terminated, she had recovered her hearing in a perfect degree, and she was completely cured of the bronchocele.

CASE XXIII.—Mr. J. Terry, Sidney-street, Cheltenham. July, 1851. Has suffered for fifty years, owing to obstruction of the Eustachian tubes, from extreme difficulty of hearing, and was obliged in consequence to obtain his discharge as a military man,—the surgeon of his regiment having pronounced him incurable.

In order to make him hear at all, the voice must be raised to the highest pitch. But in a few moments (by means of the air-douche), he was astonished to find that his hearing was perfectly restored. His restoration to hearing from a state of almost total deafness was so sudden that it could not but surprise all who witnessed it. W. Dalton, Esq., surgeon, Cheltenham, has seen this patient.

CASE XXIV.—Mrs. Smith, Maidenhall house, Cheltenham, hearing of the above case, applied to me. States she has been afflicted with deafness and a never-ceasing noise in the head and ears, and that she had been under treatment by several medical men, no benefit resulting; thinks the noise will drive her out of her "mind."

Her sufferings arose from obstruction of the passages. This lady was cured by seeing her twice only, after which she stood in need of no further assistance,—all her fears and complaints

having vanished along with the removal of the obstructions.

Case XXV.—Mr. Platten, a master tailor and draper, has laboured under deafness, and a very uncomfortable sense of weight and fulness in the head and ears, loud buzzing, and giddiness, for upwards of twenty years, which incapacitated him from following his business. I found, upon examination, both Eustachian tubes stopped.

On the first introduction of the air-douche, the annoying sense of weight and fulness in the head immediately disappeared, and the hearing was considerably improved. Under this treatment, within a fortnight, the hearing again acquired its natural acuteness, and all the annoying sensations in the head and ears utterly left him.

Case XXVI.—Miss Gooch, aged 21, had been totally deaf of both ears, from obstruction of the Eustachian tubes. Her deafness came on quite suddenly, without her being able to refer its origin to any precise cause.

This young lady was cured, as well as her sister (Case 27), aged 12 years, who had lost her hearing from a similar cause, though in this instance the malady came on gradually.

In both cases the air-douche, repeated in the former eight times, and in the latter twice, com-

pletely succeeded in restoring the power of hearing. There was no tinnitus, or noise in the ears, in either case.

Case XXVIII.—Mr. Kidd, 30 years of age, having taken cold, became affected with considerable difficulty of hearing, without any noise or singing in the ears.

I found thickening of the membrane of the drum, and strictures in both Eustachian tubes. In spite of all my attempts, repeated several times for a fortnight, to dilate this stricture either by the introduction of whalebone stilets, or catgut bougies, I entirely failed. The difficulty of hearing, therefore, remained unrelieved.

Perforation of the drum—the last remedy for this form of disease—was not proposed; as it is proper to state that this seldom answers; the punctured membrane reunites, and the disease returns.

Case XXIX.—March, 1850, a young man, son of Mr. Anderson, of Ipswich, was brought to me for my advice. His mother stated that he had been deaf ten years. No cause could be assigned for the loss of hearing. Membrane of the drum and auditory passage on either side seemed perfect. I stated to Mr. Pitcher, a medical gentleman of that place, who was present, that I believed this case depended on engorgement of the Eustachian tubes, and in

all probability would be relieved immediately by the air-douche. This was accordingly made use of—the power of hearing being instantaneously restored.

Case XXX.—Mr. E. Manning, a teacher, aged 19, sent to me by Mr. Pitcher, as above. Has been deaf from infancy, with a continual noise in the ears. Cannot date his malady to any cause. Externally the ears presented a natural appearance.

In this case also a cure was speedily accomplished. Even on the patient's first attendance, the hearing of the right ear was completely restored. The air-douche was again employed on the following morning, and the auditory power of this ear also was immediately recovered. This was an extremely interesting and successful case. The patient has been seen by Mr. Pitcher, and Mr. Elliston, surgeons.

Case XXXI.—Mrs. B——, a lady of delicate constitution, 42 years of age, has been deaf to a distressing degree for many years, with violent noises extending from the ears to the head. No apparent defect could be detected in either ear; thinks repeated colds the cause of her deafness.

After a few visits, by means of the air-douche, an extraordinary improvement in the state of the patient's hearing was effected. On her third attendance, the noise in the ears had

entirely ceased, and she heard distinctly a conversation carried on in an ordinary tone. Previously, it was quite painful to converse with her. Both Eustachian tubes were obstructed. Mr. Pitcher, surgeon, saw this case also.

CASE XXXII.—Mr. C. Richards had suffered for two years from violent singing in the ears, "similar to the noise of a steam-engine," caused by obstruction of his Eustachian tubes; and had tried many remedies without finding any relief. The attendant diminution of hearing was but very trifling. The air-douche, on the first application, cleared the passages, and removed instantaneously the patient's sufferings, which, for the two preceding years, had baffled every attempt at alleviation.

CASE XXXIII.—A lad, 14 years of age, was brought to me by Mr. Barron, an eminent surgeon, of Holbeach. He had been very deaf for several years, and unfit for any occupation in consequence. Both Eustachian tubes were stopped. The air-douche was introduced, and the patient's hearing was perfectly restored. This was accomplished in a very few minutes, in the presence of Mr. Barron, who kindly assisted me, and who expressed much satisfaction at the simplicity and speedy nature of the cure.

CASE XXXIV.—Master Bell, aged 15. His

father states that he has been deaf from the age of two years. Owing to this cause, his articulation has been very indistinct ever since. Cannot trace the malady to any particular source. External ears quite natural. The throat and palate are well formed. Both Eustachian tubes were obstructed. I saw this patient only four times, after which the deafness was perfectly cured,—the air-douche having been the only remedy employed; and Mr. Bell informed me that, since the recovery of the hearing, his articulation had greatly improved.

Case XXXV.—Mr. George Henson, a railway engineer, has been deaf for several years. Ascribes the loss of hearing to exposure to cold. Complains of noises in the years, and a dull, uneasy sensation in the head. Never had any medical advice. I cured this patient instantaneously, on the first application of the air-douche. His Eustachian tubes were obstructed.

Case XXXVI.—A medical friend of the author had been deaf in one ear from infancy. The membrane of the drum was found thickened, and slightly perforated, with a discharge from the canal, and partial obstruction of the Eustachian tube. The ear was first syringed with warm water. The patient then rubbed in tartar emetic ointment behind the ear, and made use of a solution of acetate of lead, and afterwards

of weak injections of pyroligneous acid. The Eustachian tube was rendered free by the air-douche. After using the above remedies for several months, all the morbid symptoms, except the perforation, disappeared, and the hearing had been considerably improved.

If this form of disease be treated in time, we may reasonably reckon on effecting a cure, and preventing all the consequences to which it gives rise. But if the disease has already existed for a long time, then even after the removal of all inflammatory symptoms, there will still remain as incurable sequelæ, at least opacity and thickening of the drum, the injurious influence of which on the hearing cannot at all be estimated.

Case XXXVII.—Mrs. Ashton consulted me respecting her son, 10 years of age, who had been deaf from birth. Countenance vacant, and he looks pale, and out of health. She is unable to assign any cause for the deprivation of hearing. In less than a fortnight, by the use of the air-douche alone, he was completely cured. I saw this patient frequently afterwards, his general health being much improved; this was remarked by his mother, as well as his having lost a dull, vacant exprssion of countenance.

Case XXXVIII.—Master Mason, aged 14 years. His father says he has been exceedingly

deaf for five or six years, but is not aware of any cause to which the disease could be attributed. This was a similar case to the above, and was cured instantaneously by the air-douche. The remedy was not repeated, a perfect restoration of the hearing having been effected on the patient's first visit.

CASE XXXIX.—Miss Todd, 18 years of age, has suffered from deafness and different kinds of noises in the ears from childhood. Her hearing is always worse after taking cold. Says the ears had been frequently syringed without any benefit, and that blisters applied behind them had no better effect. I found her Eustachian tubes obstructed. For several days after the first employment of the air-douche, she heard much better. This young lady attended five or six times. The noises in the ears then ceased, and she had perfectly recovered her hearing.

CASE XL.—Vincent Blackburn, a groom. Deaf in one ear for many years, from exposure to cold. I found the Eustachian tube on the same side stopped. Air was introduced; and before even the completion of the operation he was effectually cured.

CASE XLI.—Master Archer, 13 years old, has been deaf, in both ears, for six years, from obstruction of the Eustachian tubes. His father brought him to me, requesting that I would

examine his ears. On his third visit, by the use of the air-douche, his hearing was completely restored.

Case XLII.—Mr. Dickens applied to me on account of great dulness of hearing. He had been deaf for many years. On examination, I found the Eustachian tubes closed. Almost immediately, on the first application of the air-douche, his hearing, on both sides, was perfectly restored. I saw this patient twice only.

Case XLIII.—Master Jones, an intelligent lad, aged 14; has been deaf two years. His father thinks the loss of hearing was occasioned by cold. Is so deaf he cannot hear ordinary discourse. On his second attendance a complete cure was effected, by means of the air-douche. This was a case of engorgement of the Eustachian tubes.

Case XLIV.—A son of Mr. Wallace, aged 15, had been deaf since eight years old. Cause of the loss of hearing similar to the above. Only four attendances were required to effect a cure in this case. No further treatment was needed.

Case XLV.—Mr. Dunmore requested me to see his son, aged 13 years. Has been deaf four years. Says that at school his deafness is a great disadvantage to him. I found both Eustachian tubes obstructed. On his fifth

attendance, a complete cure had been effected by means of the air-douche.

Case XLVI.—Mrs. Lown, aged 40, has been deaf in both ears for many years. Complains of a continual noise in the ears. There is a deficiency of the secretion of wax. Has been under my care for a fortnight. In this case the application of the air-douche proved very successful.

Case XLVII.—Master Caley, aged 15, has been obliged to leave college, in consequence of almost total deafness. While at college he took cold, and had violent ear-ache. Soon after the attack, a thick discharge flowed from each ear, when the deafness became extreme. I at first treated the discharge in the usual way, but could not improve at all upon the deafness. The air-douche was then employed. On its first application, to the great joy of his guardian, who accompanied him, he heard my watch quite distinctly, at full an arm's length. The treatment was continued during six weeks, and a complete cure of the deafness and discharge was accomplished.

Case XLVIII.—A youth, son of Mr. Chapple, of the post-office, Bristol, was under my care some time since, in whom the dulness of hearing was so great that he was nearly deaf; quite so on one side. His deafness had endured for

eight years. No defect in the external ears could be discovered. On introducing air into the Eustachian tubes, he immediately heard my watch with the right ear at a distance of four feet. Previously this had been the worst ear. By subsequent treatment, he recovered his hearing in the right ear; but in the left only partially, in consequence of thickening of the mucous membrane of the Eustachian tube.

Case XLIX.—Thomas Boucher, aged 46, December 26, 1851; recommended by Mr. Parsons, surgeon, Old Market-street, Bristol, has suffered for many years from deafness and noises in the ears. I found engorgement of the external ears, and both Eustachian tubes obstructed. The condition of his hearing was so very much improved by syringing and the air-douche, that in a short time he discontinued his visits, much pleased with the benefit he had received.

Case L.—Mr. Pierce, surveyor, No. 1, Hanover-street, Bristol, applied to me in April last. He stated he had been so deaf for several weeks that he was prevented following his business in consequence. The case was similar to the preceding one. He was cured by the same treatment, on his fourth visit. He called again in a day or two after, and then stated that he had

been to church on the previous Sunday, and had heard the sermon quite distinctly.

Case LI.—Master Smith, son of Mr. Smith, of Iron Acton, a respectable farmer, aged 11, had the scarlet fever, when eight years of age, and from that time was afflicted with deafness. On examination, I found both Eustachian tubes obstructed. The air-douche was employed, and after three visits his hearing was perfectly restored.

Case LII.—A young gentleman, son of Mrs. Grace, Queen-square, Bristol, had been deaf of one ear for many years. Air introduced into the Eustachian tube indicated obstruction, with thickening of the membranes. Master Grace has been under my treatment over three months. He is now (July, 1852), I am happy to say, much improved in his hearing and general health.

Case LIII.—Mrs. Allen, Bush Chambers, Bristol. Deaf twelve months. Has a noise in the ears "like the rushing of water," sometimes violent, particularly in the right ear, at other times more feeble. Since the deafness she has been subject to giddiness, and when she goes out is afraid of "falling down in the street." The ears are devoid of secretion. Some air was thrown into the Eustachian tubes. Great relief to the head and ears followed immediately on

this. The patient never experienced any giddiness again, and her hearing, compared with what it had previously been, was much improved. In church she hears the preacher's voice distinctly. Her own voice was inaudible to her before.

CASE LIV.—George Aaron, 11 years of age. Recommended by Mr. Stokes, Horton-street, Bristol. About three years ago, while standing on a ladder, let go his hold and fell; alighting on his head on the pavement, he was taken up insensible, and has been deaf ever since. External ears quite sound. I saw this patient several times, and catheterised his Eustachian tubes with great improvement, his hearing being much restored.

CASE LV.—A son of Mrs. Young, 21, New Cut, near the Terminus, Bristol, aged 14. His mother states he has always been dull of hearing. She says he is so deaf that he is quite useless for any business, and that she took him to the Dean-street Dispensary, London, where he had been under treatment for six months, without obtaining the slightest benefit. I found both auditory canals and the membrane of the drum on each side perfect, the tonsils enlarged, and both Eustachian tubes stopped. On the first introduction of the air-douche, to her agreeable surprise, the hearing of the right ear was instantly restored. Equally successful was the remedy

on the opposite side. The patient not enjoying good health, and being of a strumous habit, I ordered a mixture of *iodide of iron*, to be taken twice a day. He is now in a situation, much improved in health, and perfectly cured of his deafness.

CASE LVI.—Elizabeth Carey, 18 years old, recommended by Miss House, College Green, has been afflicted with deafness in both ears during the last two years, from the effects of cold. Has been under the care of several surgeons, and taken a variety of medicines internally, no relief accruing. Outwardly, the ears are quite sound. She is so exceedingly deaf that it is necessary to repeat often what is said to her, and the voice must be considerably elevated to make her understand. No sooner had I passed a little air into her Eustachian tubes, than she said she heard "much better," and that I had done her "more good, even the first time," than she experienced from a treatment of three months elsewhere. She immediately heard my watch tick with both ears, quite distinctly. The air was repeated several times, and always with the same success. But I am doubtful whether a cure will be effected in this case, in consequence of thickening of the mucous membranes of the tubes.

CASE LVII.—Mr. Harrington, 9, Park-place,

Bristol, has suffered for eight or nine years from a perpetual noise in his ears, accompanied by slight diminution of hearing. I found engorgement of both ears, from hardened wax. This was syringed out, but seemed to afford no alleviation of the noise. Air was then thrown into the Eustachian tubes (which were obstructed), and with much better effect. Four or five visits were required in order to remove these several obstructions, the noise, and the diminution of hearing.

Case LVIII.—Ellen Banks, aged 22, No. 3, St. James's-place, Bristol, August 5, 1852. Has been extremely deaf for two years, brought on, she believes, by cold. Her expression of countenance is dull and vacant, and she looks stupid. When addressed, the speaker's mouth must be applied close to her ear. Had been under medical treatment for four months before she came to me, and the friend who accompanied her said that she made every body about her unhappy, so great was her deafness. On examination, not the least defect could be detected in the ears outwardly. To her great surprise she was cured instantaneously, by means of the air-douche. This was passed into her Eustachian tubes only once, when she heard distinctly. Her countenance then became animated and cheerful, and she went away delighted with the good

fortune that had attended her first visit. All who know her were astonished at the sudden recovery of her hearing. To pass on to the subject of

NERVOUS DEAFNESS, OR DISEASES OF THE INTERNAL EAR.—The immediate cause of *nervous deafness* is a deficiency of power in the auditory nerve. It has been said that this enfeebled state of the nerve is produced by some morbid alteration of the membranes on which the nerves are expanded, by a change in the properties of the fluids contained in the labyrinth, which it was supposed might be in too great or too small a quantity for perfect hearing, &c., &c. These hypothetical organic conditions being unsupported by any post-mortem observations that can be relied on, Itard strikes them out of the list of diseases of the ear altogether. Kramer views them in a similar light, and remarks that this *nervous deafness* has hitherto been frequently misused as a cloak for ignorance and want of skill, in any doubtful or obscure disease of the ear. The auditory nerve is the principal seat of the disease, and it is on it that attention should be fixed.

Debility of the auditory nerve is described by Kramer under two different forms. First, augmented irritability,—erethismus. Second, diminished irritability—torpor. Tinnitus, or

noise in the ears, forms the chief point of difference between the two; it is peculiar to the irritable form, whilst in the torpid form it is entirely absent.

IRRITABLE NERVOUS DEAFNESS makes its appearance very gradually, usually in one ear alone, seldom in both at the same time, and the patient first discovers it by some slight diminution of the power of hearing. Sooner or later, noises in the ears occur, and are always most violent in the ear which had first been affected. At the commencement the noises are of a deep-toned character, resembling the roaring and foaming of the sea, the descent of rain, the rustling of the wind among the leaves, or the humming and buzzing of insects. When the disease is more fully established, the noises are of a singing kind, like the chirping of birds, whistling, the singing of a kettle of boiling water, and even of a steam-engine.

Very frequently these noises extend to the head, so that the patient sometimes can hardly tell whether to refer them to the head or the ear. Anxiety of mind, grief, all excesses, and depressing passions, as well as cold, damp, stormy weather, considerably increase both the noises and the dulness of hearing; whilst by serenity of mind, pure air, &c., they are diminished for a time. This transitory improvement

induces a delusive hope that the malady will disappear of its own accord, and the patient, in consequence, frequently defers seeking for advice until it is too late. If, in general conversation, he finds that the voices arrive at his ear in a confused, unintelligible manner, he may be assured that it is then time for him to have recourse to proper medical treatment. In most cases there is a diminution of the secretion of wax, accompanied by a very annoying tingling; the ear becomes dry, and is either extremely sensitive, or, in other cases, altogether insensible to the touch. This loss of sensation sometimes extends to the whole auricle, and even to the cheek; and there is frequently associated with it a feebleness of sight and smell.

Particular sounds prove a better stimulus to the ear, in these cases, than others, though equally loud or even louder, as the music of a pipe, of a drum, or of several bells ringing at the same time. Holder relates the case of a man who never heard but when he was beating a drum; and Sauvages a similar case of a lady, who on this account, always kept a drum in the house, which was constantly played on while she conversed.

He gives another case of a patient who was always deaf except when travelling in a carriage, during which time, from the rattling of

the wheels, he was capable of hearing and engaging in conversation.

Others again hear sounds doubly, and in different tones or keys. And hence this description of imperfect hearing has a considerable resemblance to squinting, in which the axis of the one eye is not accordant with that of the other, whence the same object is seen double, and often in a different position.

THE TORPID FORM OF NERVOUS DEAFNESS differs from the foregoing, only by the total absence of noises in the ears. The longer the disease in this form exists, the greater does the difficulty of hearing become, so that eventually almost complete deafness ensues. Gradually all traces of the secretion of WAX disappear; though in some instances it continues undisturbed, notwithstanding the progressive paralysis of the auditory nerve. In both forms of nervous deafness, upon examining the ear with the speculum, the membrane of the drum, in general, is found white like paper, and opaque. The auditory passage is free, and, in most cases, devoid of any ceruminous secretion. The cavity of the tympanum and Eustachian tube are equally free from any accumulation of matter.

Nervous deafness never developes itself suddenly. Its first advances are made gradually and imperceptibly, up to the time at which the

patient becomes aware of his malady. Among the predisposing causes of nervous deafness hereditary predisposition is the most common. The principal exciting causes are cold, all debilitating, depressing emotions of the mind, such as distress, care, grief, night-watching, washing the head and ears with cold water, loud explosions of fire-works, artillery, concussions of the head, &c.

The proximate cause, in the erethitic form of nervous deafness, is an augmented irritability of the auditory nerve. In the torpid form, diminished irritability. In general, the prognosis is the most unfavourable for those patients who have already undergone severe debilitating modes of treatment, such as shatter the whole nervous system, and the auditory nerve in particular

In the treatment of the disease, regard must be had to the general state of health of the patient, should this require our attention. If not, the treatment of the diseased auditory nerve should be immediately commenced. For this purpose, a glass vessel, capable of holding eight or ten quarts, is provided with two brass tubes—(see Engraving, fig. 3,)—each furnished with a stop-cock. One of these tubes is connected at the top with a funnel, for the reception

of acetic ether, and the other with a tube to convey the vapour generated into the middle ear.

When the apparatus is to be used, five or six drops, and progressively eight or ten, as the case may be, of pure acetic ether are to be poured into the vessel (the cocks being closed), where it is vaporised at the ordinary temperature of the room. During the treatment of the patient, water is permitted to flow very gently through the funnel into the apparatus, by means of which an amount of vapour is disengaged, equivalent to the quantity of water flowing in. The vapour thus produced fills the interior of the apparatus, and is in a slight state of condensation, whence, on opening the cock, it is to be conveyed through the Eustachian tube into the affected ear of the patient, who sits near a table during the application. Each sitting occupies ten or fifteen minutes, and is daily repeated, alternately applying the vapour to the right and to the left ear.

As the vapour of acetic ether seems to possess the power of lessening irritability, and invigorating the enfeebled auditory nerve, it is used in preference to all other kinds of ether, as well as on account of its extreme mildness. It is a remedy which has often a most extraordinary effect in relieving the tinnitus, or noise in the

ear, and may be employed in even very bad cases, with the greatest prospect of success.

In general, the tinnitus is diminished, and the hearing improved, even during the first or second sitting, so that in a week or ten days there may be observed an increase in the distance at which the watch is heard. The preceding plan, however, is not adapted to the *torpid form* of nervous deafness, in consequence of greater excitement being required in this disease. A more energetic method must therefore be pursued.

This is attained simply by allowing hot water to flow gradually into the vapour apparatus (or by a spirit lamp placed underneath), acetic ether having been previously dropped in. By this means the vapor obtained is rendered more powerful by the decomposition of the ether which is effected, and by its being conducted into the middle ear *warm* instead of *cold*, as in the former instance. The same remarks apply to the vapour of acetic ether as to the medicated air, already minutely described; that is, it may be impregnated with particles of different medical substances—sedative or stimulant—according to the nature of the case to be treated.

Case LIX.—Miss M——, 17 years of age, had suffered for two years from nervous deafness and noises in the ears, which she attributed

to having taken cold whilst at school. I found the external ears sound, and the right Eustachian tube free to the passage of air; but the left tube could not be explored, owing to irregularity of structure. The treatment was, therefore, confined to the right ear alone, and consisted of the introduction of the vapour of acetic ether into the middle ear. This circumstance afforded me an opportunity of witnessing a very striking instance of the intimate connection which exists between both ears.

After the treatment had been persevered in daily for two months, although it was confined exclusively to one side, a very satisfactory improvement in the power of hearing was effected, not merely in the right ear, but also in the left, into which no vapour had entered. At the close of the above period, the noises in the ears had entirely vanished, and the hearing distance increased on the right side from only four inches to four feet; and on the left, from immediate contact of the watch with the ear, to three feet and a half. This young lady, however, stopped half way, in the middle of the treatment—her parents being quite satisfied with the benefit she had already received.

Case LX.—Miss C——, aged 49, had been affected for many years with deafness and violent noises in the ears, the gradual imper-

ceptible increase of which cannot be referred to any distinct cause, excepting that several members of her family also suffer from deafness. She had tried many remedies, such as drops, syringing, blisters, leeches, purgatives, electricity, galvanism, &c., without obtaining the slightest benefit. On the contrary, her complaints were rendered even considerably worse. The tinnitus, or noise in the ears, never for a moment left her. It accompanied her to bed, awoke her from sleep, and was the first thing that attracted her attention on opening her eyes in the morning. With the right ear she heard my watch only at the distance of an inch, and with the left not at all.

I found the external ears sound, and both Eustachian tubes free. Vapour-douches of acetic ether were introduced daily into the middle ear of each side alternately; eight drops of acetic ether were poured into the apparatus each time, and during the sitting a quart of water was used. In three weeks the noise in the ears ceased, and only returned now and then for a short time, after bodily fatigue. The treatment was continued for three months, at the end of which time she was delighted to find that she could hear my watch on the right side at the distance of six inches instead of one inch, and at the distance of four inches on the left side,

where it was previously not heard at all. This improvement induced her to terminate the treatment, which, had it been continued longer, would undoubtedly have been productive of still greater benefit. But, to quote her own words, she felt "quite a different person."

Case LXL.—Miss Whittall, aged 26, sent to me by Dr. King, of Montpellier-road. She complained of noises in both ears, resembling sometimes the singing of a kettle of boiling water, and at other times the foaming and roaring of the sea. Her disease (brought on by a violent cold), had existed during the last five years. The hearing distance on the left side was only three inches, and on the right, five inches. External ears sound—no absence even of the natural secretion of wax, and both Eustachian tubes permeable. The vapour of acetic ether, repeated every other day for four months, completely subdued the noise in the right ear, and that in the left was so far diminished as to be scarcely any longer noticed by the patient, except when she paid attention to it. The hearing distance had increased on the right side from five to thirteen inches, and on the left from three inches to one foot. Notwithstanding this extraordinary improvement, the treatment could not be persevered in, as the patient was obliged to leave Brighton.

CASE LXII.—Miss Hughes, Preston-street, 25 years of age, had been afflicted for three years with nervous deafness and noises in both ears, produced by cold. The vapour of acetic ether was introduced into the middle ear on each side, twice a week, for a short time, the effect of which, even after the first three or four applications, was the complete removal of the noises, and a very perceptible improvement of the hearing. The benefit thus acquired, seemed to have been all the patient desired, which, had the treatment been still further persevered in, would certainly have been much more satisfactory.

CASE LXIII.—Mrs. Scott, Church-street, of a spare habit of body, and delicate constitution, has suffered for eighteen years, from exposure to cold, from considerable difficulty of hearing, accompanied by incessant noises in both ears, similar to the ringing of bells. These complaints were much increased by violent bodily exercise, and fresh catarrhs. The treatment of this case, by means of the vapour of acetic ether, was so successful, that in the course of a month the noises in the ears had entirely subsided, and the hearing distance of the respective ears improved from five to twelve inches. In five weeks she discontinued her visits, having previously expressed herself perfectly satisfied, and

even *happy*, with the relief she had experienced.

CASE LXIV.—Miss Hebbett, Edward-street, 18 years of age, had suffered since three years old, from deafness and a singing noise in both ears, caused, in the first instance, by measles, and subsequently increased by inflammation of the brain. I found the external ears sound, not even without the requisite quantity of wax, and both Eustachian tubes open. With the right ear she heard a watch tick only at the distance of two inches; but with the left she could still hear it at a distance of five inches. By means of the vapour of acetic ether, continued for three months, the singing noise completely vanished, and the hearing improved on the right side, from two inches to six feet, and on the left from five inches to sixteen feet; so that she was enabled to carry on conversation in an ordinary tone with the greatest ease and facility.

CASE LXV.—A clergyman was afflicted with the triple calamity of dullness of hearing, smell, and taste, having lost those three senses without being able to assign any cause for it. On examination, no visible defect in the respective organs could be discovered, except an absence of the secretion of wax in the ears. The Eustachian tubes were quite free to the passage of air, indicating debility of the auditory nerve, associated with the above symptoms; there was no tinnitus. For

these complaints I employed the vapour of acetic ether, warm, impregnated with particles of veratrine, applying it to each ear through the Eustachian tubes every other day. The senses of smell and taste commenced to be re-established on the third visit, and were finally restored. The patient attended only for a very short time, and was thus freed from these annoying complaints, and his torpid nervous deafness, though not cured, in consequence of the shortness of the attendance,—a week—was considerably improved.

Case LXVI.—Mrs. Jackson, Cambridge-street, has suffered for years from nervous deafness and continual noises in the ears, producing great depression of mind and spirits; her head was so confused and bewildered, that she was apprehensive of losing her senses. She was not aware of any distinct cause to which her malady could be referred. I found the external ears sound, and the Eustachian tubes free and open. In this case, on account of the extreme intensity of the noises, the vapour of acetic ether was charged with particles of belladonna, and introduced into the middle ear on both sides alternately, for several weeks. This had the effect of completely relieving the head and ears of the confusion and noises, even during each sitting; while, at the same time, it was attended by

entire alleviation of the patient's mind, and marked improvement of the hearing; so that, in a short time, she became independent of any further medical assistance.

Case LXVII.—Miss F——, from repeated colds, became affected with deafness and noises in the ears, and before I saw her, had been under medical treatment without obtaining any relief. A watch was heard alike on either side, at a distance of only four inches. Without any other collateral means, the vapour of acetic ether was introduced into each middle ear every other day, and in a short time, she was pleased to find that the noises had entirely disappeared, and the hearing improved from four inches to the ordinary distance at which a watch is heard by a sound ear. This young lady was sent to me by J. Pitcher, Esq., surgeon, before alluded to.

Case LXVIII.—Sarah Ann Huggins, 25 years old, recommended by Miss Wall, complained of violent buzzing in the right ear, unaccompanied by any difficulty of hearing. Etherous vapour, applied three times a week for a month, proved eminently successful; the buzzing, which had been of recent date, having been completely tranquillized.

Case LXIX.—Master W. G. Worger, 9 years old, St. George's-st., has suffered since the age of five years from nervous deafness and singing in

the ears, which came on soon after a severe attack of ear-ache, experienced while at school. The pain lasted several days, and then ceased, leaving behind, in addition to the deafness, a discharge of matter from the left ear. Both Eustachian tubes were free. The discharge from the ear was soon removed by mild injections, counter irritants, &c. For the deafness, the vapour of acetic ether was had recourse to, and continued for several months. At the conclusion of the treatment, the singing in the ears had entirely ceased; and the hearing distance had increased on the left side from two inches to three feet, and on the right, from four inches to nearly four feet. The patient has again returned to school, and continues to hear quite well.

Case LXX.—Emily Harris, 19 years of age, recommended by Mrs. Sparks, Berkeley-square, Bristol, has suffered from nervous deafness and noises in both ears, for twelve months. States that after the least excitement or stooping, her head "is dreadful." Eustachian tubes free. Medicated air was passed into the middle ear in this case, and she says that after each application she feels as if her head "was relieved of a hundred weight." She had only attended occasionally. She also laboured under a considerable degree of bronchocele, which, after having resisted various remedies during the past ten years,

was almost entirely dissipated by a solution of *iodide potassum*, taken twice a day, for six weeks.

CASE LXXI.—Mr. Howard of the Bristol Pottery, has been subject to nervous difficulty of hearing in one ear for twelve months, attended by a continual singing noise. The vapour of acetic ether was introduced into the cavity of the tympanum every other day for nearly three months, the noise being calmed, and the hearing materially improved. Having been called into Wales on business, the treatment was interrupted for a time; but by continuing it still longer, a cure may be anticipated.

CASE LXXII.—Mary Henes, aged 20, 7, Cherry-lane, Stoke's-croft, had been deaf in both ears for twelve months, and was obliged to give up her place in consequence. After three weeks' treatment by means of etherous vapour, she had so far recovered her hearing, as to be able to resume her situation as a domestic servant.

CASE LXXIII.—Mrs. Cole, Hotwell-road, Clifton, had suffered for years from weight and difficulty of hearing, particularly in the right ear, with noises and confusion of the head, so that at times, she hardly knew what she was "about." The vapour of acetic ether was applied occasionally, for several weeks, and with such relief to the patient, that she has not found

it necessary to continue her attendance of late. A number of similar cases might be adduced, if time and space permitted.

Mr. NEILL, in passing a catheter into the Eustachian tube, which he does very neatly, stands behind the patient, which he thinks is preferable to the usual way of facing the patient. While I write, there lies before me a letter of a retired Naval Officer, from which the subjoined case is an extract.

CASE LXXIV.—I duly received your most welcome and blessed prescription, directing me to rub a little of the liniment behind the ear, night and morning, which I am most happy to inform you, by God's blessing, I had only done for eight days, when I recovered my hearing so well, that I could, and do still, hear the ticking of the clock; but the singing noise still continues, although not near so bad as before. I am completely at a loss, Sir. how to express myself in terms of gratitude for your being the means of conferring so great a blessing upon a fellow-creature, &c., &c. Andrew Perry, Winchelsea, near Rye, Aug. 11th, 1852.] The prescription alluded to, contained veratrine.

The dense, peculiar structure of the ear, demands a well directed topical plan of treatment, to the almost entire exclusion of general remedies, unless these are indicated by the presence

of other diseases. Of course we must act discriminately. Principles must be our guides. Those who have no chart or science watch the sky, —those who know navigation sail equally well by night; and the means already pointed out are those on which we must rely for success.

I am anxious to be explicit on this subject, and in the hope of doing something to remove the stigma and erroneous prejudices hitherto attached to *acoustic medicine*, I have been partly induced to extend these cases and observations.

I cannot omit this opportunity of expressing my obligations to G. J. Guthrie, Esq., F.R.S., late President of the Royal College of Surgeons, &c., &c., for the courtesy and attention I experienced from him during the time I had the honour of being one of his numerous pupils.

From this deviation, I now return to DISEASES OF THE EXTERNAL EAR, and proceed to record the following cases :—*Accumulations of hardened wax in the auditory canal*, in advanced age, acquires a disposition to crystallize, partly in an earthy form. Morgagni has found it of the hardness of stony matter. Any irritation, or inflammatory excitement of the auditory passage may give rise to it. Its treatment is extremely simple.

CASE LXXV.—J. Curnett, Esq., aged 62, for eighteen years had laboured under considerable

difficulty of hearing and loud singing in the ears. I found large quantities of hardened wax in both ears. These accumulations were removed by means of the syringe, upon which the singing in the ears immediately ceased, and the patient's hearing was suddenly restored.

Case LXXVI.—The Hon. Mrs. D——, complained of deafness and a continual noise in the ears. Both ears were found to be stopped with viscid cerumen. Warm water injections in the course of a few minutes cleared out the auditory canals, and this lady's deafness and noise in the ears speedily and entirely disappeared.

Case LXXVII.—The Rev. Mr. Emmett, a near relative of Sir Hussy Vivian, requested my advice respecting total deafness of his right ear. On inspection, I found the auditory canal completely filled with hardened ear-wax. Various remedies had been tried for this seemingly hopeless disease, but without effect; and the affected organ had remained useless for not less than eighteen years. A cure, however, was speedily accomplished by simply syringing the ear; and thus a case, which was regarded as a nervous affection and incurable, was quickly and effectually restored. No one had taken the trouble to examine the ear.

Case LXXVIII.—Captain Harmer, R.N., had suffered for twelve years from extreme deafness,

with slight singing in the ears. I discovered in each ear a quantity of very hard wax, which I removed by simple injections; and though the idea of his coming to Brighton to get cured of his malady (for which he was told there was no remedy), had been ridiculed, he returnod to his residence near Dorking, in full possession of his long lost, but valued hearing.

Case LXXIX.—The Countess A———, had experienced considerable difficulty of hearing, tingling, and buzzing in the ears, and unusual noises. On examination, both ears were found quite full of indurated cerumen. The removal of which, by means of the syringe, was speedily followed by a complete cure of the patient, whose annoying complaints immediately and entirely vanished.

Case LXXX.—Mrs. Ougden, 57, Cavendish-street, had been afflicted with deafness and tinnitus for nearly twenty years. She described the noises in her ears as resembling alternately the blowing of a strong wind, the ringing of bells, and the roaring and foaming of the sea. Twelve years ago, she was under treatment for these complaints at the Brighton Dispensary, since which time she has been gradually getting worse. I found the ears blocked up with hardened wax, which I removed with the syringe, and in the course of half an hour she was cured of all her suffering.

Case LXXXI.—Major H——, complained of deafness and tinnitus for several years; both ears were engorged with indurated cerumen. A few injections of warm water cleared the auditory passages, and his hearing was immediately re-established.

Case LXXXII.—W. G——, Esq., applied to me for relief. The case was similar to the above; the same means were employed; and this gentlemen also was cured of deafness and singing in the ears, by very simple, but speedy and successful treatment.

Case LXXXIII.—Mr. Hamilton, had been quite deaf on the right side about 49 years, which he ascribed to exposure of the head to cold. A large plug of cerumen, almost as hard as flint, obstructed the ear. Simple injections washed out this morbid product, and in less than half an hour he was cured of deafness, singing in the ear, and confusion of the head, under which he had laboured for nearly half a century.

Case LXXXIV.—Miss Weaver, aged 21, St. George's-place, had an obstruction of the right ear, in which she was quite deaf for several years. Two days before she applied to me, she became deaf in the left ear also, which induced her to seek my assistance. Both ears were engorged with hardened wax. This was removed by syringing—and acute hearing was immediately restored.

CASE LXXXV.—A lady had suffered from deafness of her right ear, and was constantly annoyed by a singing noise. She consulted a general practitioner, who advised her not to meddle with the case, nor even to allow the ear to be syringed, an operation which he described as highly dangerous to so delicate an organ, Her complaints having increased, she applied to me. I found the ear completely engorged by hardened wax, deeply seated, and filling up the passage. This was removed by a few injections of warm water, and along with it the patient's deafness and singing in the ear entirely and permanently disappeared.

CASE LXXXVI.—Mr. J———, aged 32, had been nearly quite deaf from infancy. Besides the deafness, he complained of various noises in the ears, and confusion of intellect. Each ear was found to contain a mass of dense cerumen, so firmly adherent, that not a sound could reach the drum. The application of the syringe, however, charged with warm water, even in this forlorn case, soon effected a complete cure, the patient hearing with facility, not only common conversation, but also the ticking of a watch for the first time in his life. He was surprised and gratified beyond measure at the result of the treatment, so far surpassing his expectations. In a subsequent note, he says :—"I am still in the

enjoyment of that invaluable blessing, *hearing;* and can distinguish the most light and delicate sounds, that I have been deprived of for so many years."

Case LXXXVII.—Miss Barret, East-street, aged 25, had suffered from deafness for six months; she had been similarly affected about six years ago. I found the ears stopped with cerumen, which I removed with the syringe. Her voice now, previously deep-toned, and which she heard in her mouth, became natural and distinct; the returning sound having no unpleasant effect on the ear.

Case LXXXVIII.—Mr. Watkins, aged 60, for 12 years had lost the hearing of both ears, from engorgement of cerumen, and was unable to hear a sound without the aid of an ear-trumpet. The ears were syringed out, and perfect hearing was again restored.

Case LXXXIX.—Mrs. Burroughes, aged 76, the lady of a clergyman; states that she has been gradually growing deaf for the last ten years: can very tolerably hear a single person talk, but not in a party. This lady was instantaneously cured by a few syringes full of warm water.

Case XC.—A lady, the wife of a medical gentleman, and sister to the High Sheriff of a neighbouring county, became deaf quite suddenly in both ears. This case ceded to the use of the

syringe, almost as suddenly as it had occurred,—the ears being obstructed by cerumen.

Case XCI.—Captain R——, aged 81, R.N., had suffered, since 15 years old, from deafness and singing in both ears, which he attributed to cold. I discovered in each ear a collection of tenacious cerumen, the removal of which with tepid injections was immediately followed by a complete cure of the patient's deafness and singing in the ears, which had existed for sixty-six years.

Case XCII.—Mr. Phillips, Post-office, Redland, Bristol, had been deaf for years, and had tried different remedies, but without producing any beneficial effect. The loss of hearing depended on a quantity of dense cerumen, which filled up the ears. Warm water injections restored the patient to perfect hearing.

Case XCIII.—Mrs. Purtill, 49, Park-street, has suffered from deafness and violent singing in the ears, for 30 years. Her complaints arose from accumulations of hardened wax in both ears. When the injections had removed all the cerumen, her deafness and singing in the ears, instantly disappeared.

Case XCIV.—Mr. Colstone, 8, Lawrence-hill, Bristol, had been deaf from infancy. Both ears were found to be plugged up with cerumen. The ears were thoroughly syringed, and sound hearing was restored.

These Cases are mentioned to show the importance of endeavouring to ascertain the causes of deafness, by a careful examination of the ear, as on the removal of those causes will depend the cure of the disease. If the causes be undiscovered, the effects are likely to continue, in spite of every means we may employ.

FOREIGN BODIES IN THE EAR.—It is much easier to introduce beads, peas, cherry-stones, and other small round bodies into the ear, as children are apt to do, than to get them out again. This, however, must always be done when such an accident happens; for the presence of the foreign body sometimes excites great inflammation and swelling, and may lead to serious consequences. The most easy method is to carefully syringe the ear with warm water. Should this fail, we may succeed with a pair of small forceps, or a lever, in drawing it out. But great delicacy must be used, as the ear will not bear rough contact.

CASE XCV.—Eliza Boore, aged 10, 7, Robert-street, was sent to me by a lady in Oriental-place. The child had introduced a cherry-stone into her right ear. The foreign body had remained there eighteen months, completely obstructing the passage, so that she was quite deaf on that side. Pain came on, and soon increased, fever and great constitutional suffering.

Several unsuccessful attempts to remove the cherry-stone had been made at the Brighton Dispensary, before I saw the patient. I removed it without difficulty, in a few minutes, by simply syringing the ear. The other symptoms subsided spontaneously.

Insects in the auditory passage are easily destroyed by dropping olive oil into the ear, which may then be removed by means of the syringe. *Polypi of the ear, &c.*, and discharges have been already noticed. All medical men must have become familiar with many chronic forms of deafness, far too numerous to be described here, and all presenting stages of disease subsequent to inflammation. The patients forming the subjects of these cases, have generally had the drum of one or both ears perforated, thickened, or destroyed, in consequence of the discharge which usually accompanies the malady.

Case XCVI.—Mr. B——, 32 years of age, when about seven years old, was attacked by scarlet fever, on recovering from which a discharge took place from the left ear. Shortly afterwards polypus made its appearance, and a viscid, offensive matter continued ever since to escape from the ear. The polypus was of a round shape, and not only completely filled the canal, but even protruded beyond its orifice. With this ear my watch was quite inaudible,

whilst the right ear remained unaffected. I removed the polypus with a pair of forceps; the roots were destroyed by caustic, astringent injections, and acetate of lead, so that at the end of three months, it was entirely consumed. The giddiness which the patient had complained of, together with the discharge from the ear, disappeared in the same proportion as the excrescence, and his health, which had been greatly undermined, was restored. But the membrane of the drum was too much thickened to allow of any considerable improvement in the hearing.

Case XCVII.—A lad, recommended by Mrs. Grace, Queen-square, Bristol, had a polypus in the right ear, accompanied by deafness and purulent discharge, for twelve years. The polypus was seized by a pair of curved forceps, and twisted off; the roots were then touched with nitrate of silver, and subsequently with acetate of lead, dropped into the ear. With this treatment all the patient's complaints disappeared.

Case XCVIII.—Miss E.——, 22 years of age, has been subject from infancy to a discharge from both ears, together with difficulty of hearing and a constant singing in the ears. Various curative attempts for years, by means of blisters, seatons, &c., had failed to afford her any relief. Each ear secreted a thick, fœtid, yellow matter, preceded by severe throbbing and shooting pains,

which recurred whenever she took cold. Tartar emetic ointment, rubbed in behind the ears alternately, mild injections of pyroligneous acid, acetate of lead, and, occasionally, the air-douche, were made use of in this case. After these means had been persevered in for several weeks, the charge diminished, and its disagreeable odour was destroyed. The treatment was continued for several months subsequently, at the end of which time no appearance of the discharge remained; the pains and singing in the ears had entirely ceased; and the patient's hearing was comparatively restored.

Case XCIX.—George Roberts, 23, White-Cross-street, aged 3½ years, had had a discharge from the right ear for six months, the result of scarlet fever. The ear was swollen, and the passage filled with a yellow, purulent fluid. The ear was syringed with weak alum water, tartar emetic ointment was used behind the ear. acetate of lead was dropped in, and the patient's bowels were regulated. The discharge, in about three months, entirely disappeared, the swelling of the auditory canal subsided, and the child can now hear a watch (two months after the termination of the treatment) at a distance of nine feet.

Case C.—Miss Stimson, daughter of Mr. S. Stimson, Quadring, near Spalding, has had a

discharge from both ears, together with difficulty of hearing for three years. Injections of weak alum water were directed to keep the ears clean. Tartar emetic ointment was rubbed in, first behind the right, and next behind the left ear, and a solution of acetate of lead was dropped into the ears. Four months after these means had been continued, both ears were free from all disease, and the hearing was restored to its previous normal state.

Case CI.—Jessy Berford, aged 38, recommended by Mr. Pountney, of the Bristol Pottery, has suffered for years from deafness, and a discharge from both ears. He was ordered to keep the ears clean with warm water, and to take a saline aperient once a week. An injection of alum water was used afterwards, and tartar emetic ointment was rubbed in freely behind the ears. The air-douche was used twice. The patient has discontinued his attendance, a cure of his complaints having been effected after a very short treatment. Similar to the present case, were the three following ones, all of which yielded with the utmost readiness to a similar mode of treatment, modified according to circumstances.

Case CII.—Henry Bartlett, aged 25, recommended by Mr. Cooper, Kingsdown. He had had a discharge from the ears and deafness, for

eleven years; he stated that if a gun had been fired within six yards of his ear, he could not have heard it. He was debarred from holding any situation in consequence of his deafness. Since his recovery he has procured one at Mr. Pierce's, Bridge-street.

Case CIII.—Charles Baldwin, aged twenty, 2, Philip-street, Bristol. His deafness and discharge from the ears had persisted for two years, in spite of different remedies that had been tried for their removal.

Case CIV.—Mary Ann Watkins, aged eight years, 5, St. Michael's-hill, Bristol, had been afflicted with deafness and a discharge from both ears for five years. This case, which had obstinately withstood various means used by other surgeons, for six months, was dismissed as cured, July 23rd, 1852, after a very short attendance.

For caries of the ear, Krukenburg recommends asafœtida with phosphoric acid, given internally; and for the discharge, the external use of solutions of corrosive sublimate and nitrate of silver, with opium.

I should never have done, should I undertake to consider many other cases of a similar nature with those I have here related. I am obliged to abridge this subject to put an end to this small treatise, which has insensibly grown very long.

In conclusion, I may be permitted to observe,

that the remedies described in the preceding pages are by no means painful in their application. On the contrary, I beg to say, they are perfectly simple and harmless. Many ladies, who have been patients of mine, require me to mention this; which request is so just and reasonable, that I cannot refuse it. I owe this testimony of gratitude to the favourable opinion, which even the ladies have been pleased to entertain of my *gentle* methods of treating diseases of the ear, the simplicity of which, I was far from supposing would ever be appreciated by them.

OF EAR TRUMPETS.

Great pains have been bestowed on the construction of Ear-Trumpets, but notwithstanding all the ingenuity that has been employed, the object is almost as far as ever from being attained. It is needless to attempt to describe the great variety of these inapplicable instruments for hearing, and to point out their inefficacy. It will be sufficient to say that all hearing instruments, but more especially metallic ones, are injurious, inasmuch as they overexcite the auditory nerve to so great a degree, that it only becomes so much the sooner paralytic. And those patients in particular, who suffer from noises in the ears, are very disagreeably affected by any strong vibratory sound; even the human voice, when harsh, and shrieking, is extremely disagreeable to them. If they are to understand the words spoken, they should be uttered in a distinct tranquil tone, and clearly enunciated. The danger is not so great in those cases in which the deafness depends, not on debility of the auditory nerve, but on organic destruction of the external or middle ear. The

instruments least injurious, are those which are merely simple conductors of sound, of which the best is the long elastic tube invented by Dunker.

Analagous effects are produced, when the degree of deafness is so great, that even a loud voice is no longer intelligible by means of the above conducting tube, by endeavouring to conduct the sound through the bones of the head. The method recommended by Jorrissen, consists in directing the patient to place between his teeth one end of a slender piece of wood, whilst the person speaking in like manner takes the opposite end between his teeth, so that the words spoken pass along the wooden conductor and arrive at the auditory nerve through the teeth and bones of the patient's head. But after all the inconvenience attending such a method, it does not much facilitate oral intercourse. For, as sound moves with different velocities through media of different densities, the wave which produces the sound will be partly reflected in passing from one medium to the other, and the direction of the transmitted wave changed; and hence in passing through such media, different portions of the wave will reach the ear at different times, and thus destroy the distinctness of the sound.

OF DEAF DUMBNESS.

Deprived of the sense of hearing, a person living in society, but without the power of joining in conversation, must be regarded as one of the most solitary and melancholy of beings. He is shut out from all but the most imperfect intercourse with his species; and the very intellect by the possession of which he is raised above the lower creation, serves only to heighten his calamity, and to render the sense of his deprivation more acute.

The most accurate tables which have been published, showing the proportion of deaf persons to the rest of the population, are contained in the *Third Circular of the Royal Institution of the Deaf and Dumb at Paris.* According to this statement, the proportion of deaf persons to the population of Europe, is 1 to 1537. The United Kingdom alone contains 12,400, or 1 to 1622 of the population, viz., England 7570, 1 in 1585, &c., &c.

By total deafness is meant that state in which the organs of hearing are as insensible to sound

as any other part of the body. To persons in this condition, sound is a mere vibration, which can be felt, but very imperfectly distinguished. Yet persons who are generally considered as totally deaf, are not all equally so. There are cases where the firing of a gun is unheard though immediately near the deaf person, and others where a gun fired at a quarter of a mile distant, is heard and distinguished from other sounds.

In some instances, the human voice in a great variety of its louder single intonations can be recognised, though the loudest reading or the highest pitch of a speaker would make no impression.

Itard, of the Deaf and Dumb Institution of Paris, considers that more than half of the pupils received into that Institution are of that class who hear the least; about the same proportion might be found in the English Institutions. The other half comprises cases, more or less, of imperfect hearing. In all these conditions of deafness, the individual is consequently *mute or dumb*. Hence the expression *Deaf Mute*, as used in the Continental languages, and *Deaf and Dumb*, as used in England and America, to designate a person so deaf as to be inaccessible by the ordinary means of lingual communication.

Among the causes which act prejudicially on

the organ of hearing during early life, and which prevent the developement of the faculty of speech, original defects of conformation stand pre-eminent; though it is not improbable that in some cases, paralysis of the auditory nerve may be the cause. Whether any rational mode of medical treatment for deaf mutes be still admissible is very doubtful; but the most recent and rational methods in this department, are the air-douche, of which Delean, in particular, has freely availed himself, but only in such cases in which a careful examination of the ear had proved that mucous engorgement of the Eustachian tube and cavity of the tympanum existed. If both were free, he declared the disease to be nervous and incurable. Kramer comes to a similar conclusion, and declares, distinctly, that hitherto no single deaf mute has been cured. He adds, the problem, so important for all mankind, whether deaf dumbness be curable, is, therefore, practically as yet unsolved; affording sufficient reason for doubting whether it ever will be in the affirmative.

THE END.

Reader, Printer, 9, Park-street, Bristol.

EXPLANATION OF THE ENGRAVINGS.

FIG. 1.—The Speculum Auris, for examining the external Ear.

FIG. 2.—Kramer's Air-Press, a description of which would be tedious.

FIG. 3—The Vapour Apparatus, for the Treatment of Nervous Deafness.

FIG. 4.—The Improved English Catheter.

FIG. 5.—The German Catheter, graduated, of which there are various sizes.